

Postgraduate Plans, Employment, and Location

The SED questionnaire includes a number of questions about the graduates' immediate plans for work or further study.¹⁸ The responses provide a useful overview of the numbers planning to enter academic positions, government and industry, and postdoctoral positions of research and further study. Information is also collected on the main types of work activities (research, teaching, administration, and professional services to individuals) that the graduates anticipate in their new positions and the geographic locations where the new doctorates plan to work or study immediately following graduation.

The *Summary Report 1998* examines three aspects of postgraduation plans. First is whether the new Ph.D. has a definite or indefinite commitment for employment or postdoctoral position, as categorized by broad field of study, sex, citizenship, and race/ethnicity (tables 20 and 21). The second aspect examined is the distribution between career employment and postdoctorate research and study programs of doctorate recipients with definite plans. These data are also categorized by broad field of study (table 22), sex, citizenship, and race/ethnicity (table 23), as well as by visa status and anticipated location (foreign versus U.S.) for non-U.S. citizens (tables 24 and 25). The third aspect of postgraduate plans examined is the distribution of graduates across employment sectors by sex, race/ethnicity, and citizenship status (table 26).

Definite versus Indefinite Plans

Over two-thirds (69.6 percent) of all doctorate recipients reported having definite commitments for employment or postdoctoral study or research appointment. This percentage is consistent with the rates for recent years, but somewhat lower than the rates in the 1980s (table 20). With the notable exception of the humanities, the percentage of doctorate recipients with definite commitments varies little by broad field. In the humanities, only 58.8 percent have a definite commitment.

The percentage of recipients with definite commitments also differs little by demographic groups (table 21). For example, about 2 percent fewer women than men have definite plans; U.S. citizens are more likely to have definite commitments (71.7 percent) than individuals with permanent or temporary visas (62.5 percent); and among U.S. citizens and permanent residents,¹⁹

¹⁸ None of the items in the postgraduation plans section of the questionnaire, except post-graduation location, is classified as being sufficiently "critical" to become the focus of missing data follow-ups. Consequently, the response rates to the items on postgraduation plans mirror the response rate of the questionnaire, minus a low rate of item nonresponse. For the 1998 survey, the overall response rate was 89.3 percent for the item asking if the respondent has definite plans for either career employment or further study. Among those with definite plans, 97.9 percent also provided information on whether they are planning on career employment or postdoctoral study. Among those with definite commitments for career employment, 96.3 percent provided information on their employment sector.

¹⁹ With regard to postgraduate plans, the discussion and tables of the five race/ethnicity groupings include permanent residents along with U.S. citizens.

whites are more likely to have definite plans (72.1 percent) than American Indians, blacks, Asians, or Hispanics.

Career Employment versus Postdoctorates

Among the doctorate recipients reporting definite plans, a large majority (70.9 percent) indicated that they plan to enter career employment as opposed to further study within a postdoctoral research or teaching program (table 22). Postdoctorates are far more common among graduates in the physical sciences (46.0 percent) and the life sciences (61.2 percent) than in the other broad fields. The historical trend is generally away from immediate career employment in favor of postdoctoral programs.

Differences among demographic subgroups are evident in table 23. Men are slightly more likely than women to have definite plans for a postdoctorate appointment (30.4 percent versus 27.3 percent), but international students are much more likely than U.S. citizens to have a postdoctorate lined up. Among U.S. citizens and permanent residents, Asian students are more likely to plan on pursuing a postdoctorate; black and American Indian doctorate recipients are the least likely to report obtaining postdoctorates. These differences reflect the higher rate of postdoctorates available in the physical and life sciences and the relatively large concentrations of international and Asian American students in those fields.

Postdoctoral Location of Non-U.S. Citizens

As the number of international students earning research doctorates in the United States steadily increased over the past two decades, so has the tendency for those students to remain in the United States following graduation. The 1998 data show that 74.8 percent of all non-U.S. citizens receiving research doctorates have definite commitments to remain in the United States, up from 52.4 percent in 1978 (table 25). Temporary residents have the greatest increase. The areas having the highest concentrations of non-U.S. citizens who plan to stay in the United States are chemistry (87.8 percent), biology (83.0 percent), computer sciences (81.8 percent), and physics (80.6 percent). (See table 24.)

Employment Sectors in the United States

The most common employment destination of new doctorates who have definite commitments within the United States remains academe (50.0 percent of the respondent subpopulation).²⁰ (See table 26.) The next largest group (24.5 percent) has commitments to industry or some form of self-employment, and 8.2 percent plan to work for Federal, state, or local government. The historical trend is a slight reduction in academic endeavors and government employment, coupled with increases in the industry and the self-employment sectors.

²⁰ Includes postdoctorates.

Among U.S. racial and ethnic groups, Asian doctorate recipients are more prone to go into industry or self-employment and less likely to immediately enter academe than those in the other racial and ethnic groups. Industry also is the main destination of non-U.S. citizens with definite plans to remain in the United States after graduation. (See table 26.)

Overall, 47.3 percent of doctorate recipients with definite employment plans indicated that they would hold academic appointments. Carnegie classification Research I universities awarded 67.6 percent of all doctorates and accounted for 67.8 percent of doctorate recipients who had firm academic employment.²¹ Research II, Doctoral I, and Doctoral II institutions granted 11.2 percent, 10.5 percent, and 4.8 percent of doctorates; they contributed 13.3 percent, 11.2 percent, and 4.2 percent of new doctorates to academic appointments. Expressed another way, 48.3 percent of Research I university doctorates were being employed in academe, compared with 50.7 percent, 46.1 percent, and 38.6 percent of doctorate recipients from Research II, Doctoral I, and Doctoral II institutions. (See table 27.)

Doctorate recipients from Research I universities were slightly overrepresented, relative to their distribution among all new Ph.D.s, in industrial positions and underrepresented in “other” employment. Degree earners from Research II and Doctoral I institutions exhibited some underrepresentation in industry; those from Doctoral II institutions were overrepresented in “other” employment occupations. (See table 27.)

Migration

About three in ten (28.9 percent) of the 1998 doctorate recipients who graduated from a high school in one of the 50 United States, the District of Columbia, or Puerto Rico are returning to that same area upon completion of their Ph.D.s. (They may already have returned to that state or never left it to pursue their studies.) California (47.1 percent) and Texas (46.7 percent) have the highest immediate “return” or “stay” rates of all the states. Graduates of Puerto Rican high schools were most likely to return to or remain in Puerto Rico after completion of their doctoral studies (50.3 percent). Wyoming (5.6 percent), Vermont (7.8 percent), and New Hampshire (8.4 percent) had the lowest rates of return. (See table 28.)

Retention of the doctorate recipients within their “home” states varied widely across broad field of study. At one end of the spectrum, only 20.2 percent of those in the broad field of physical sciences intended to return (or already had returned) to the state in which they received their high school diploma. At the other end, 46.6 percent of doctorate recipients in the field of education indicated postgraduate plans in their home state. For the other five broad fields, the percentages of doctorate recipients returning home are tightly clustered around 25 percent. (See table 28.) These trends may reflect underlying job market conditions and the location of more specialized economic activity.

²¹ See table 4 for overall distribution of degrees by Carnegie classifications.